

## REMARKS

Reconsideration and withdrawal of the rejections of the claimed invention is respectfully requested in view of the amendments, remarks and enclosures herewith, which place the application in condition for allowance.

### **I. STATUS OF CLAIMS AND FORMAL MATTERS**

Claims 13-15, 21-23, 27, 28, 47-58 and 74 are pending in this application. No new matter has been added by this amendment.

It is submitted that the claims, herewith and as originally presented, are patentably distinct over the prior art cited in the Office Action, and that these claims were in full compliance with the requirements of 35 U.S.C. § 112. The amendments of the claims, as presented herein, are not made for purposes of patentability within the meaning of 35 U.S.C. §§§§ 101, 102, 103 or 112. Rather, these amendments and additions are made simply for clarification and to round out the scope of protection to which Applicants are entitled.

### **II. THE 35 U.S.C. 103(a) REJECTION HAS BEEN OVERCOME**

Claims 13-15, 21-23, 27, 28, 47-58 and 74 were rejected as allegedly being obvious by Ruegg et al (US 6180563). The applicants request reconsideration of this rejection for the following reasons.

The applicants maintain their position from the previous office action, but since this was unpersuasive, the applicants will try to present the argument in a different manner to hopefully better explain why the applicants believe the obviousness rejection to be in error.

By apparently fixating on finding the specific compounds of (A) and (B) within Ruegg, the rejection has lost sight of what is the applicants' invention.

While it is true that the use of the term "comprising" could conceivably encompass trifloxysulfuron, this is not the inventive step of the applicants' claimed invention, i.e., it is irrelevant what other compounds are encompassed by the term "comprising" so long as the combination of compounds of formula (A) with herbicides (B1) metolachlor, (B2) bispyribac or its salts, and pyriithiobac or its salts; or (B3) sethoxydim and clethodim produce synergistic effects in combatting harmful plants in cotton crops.

As stated in MPEP 2142 (Legal Concept of *Prima Facie* Obviousness) - "To reach a proper determination under 35 U.S.C. 103, the examiner must step backward in time and into the

shoes worn by the hypothetical "person of ordinary skill in the art" when the invention was unknown and just before it was made. In view of all factual information, the examiner must then make a determination whether the claimed invention "as a whole" would have been obvious at that time to that person. Knowledge of applicant's disclosure must be put aside in reaching this determination, yet kept in mind in order to determine the "differences," conduct the search and evaluate the "subject matter as a whole" of the invention."

Applying this concept to the facts of this case, the Examiner is stepping into the shoes of the person of ordinary skill in the art *just before the applicants' invention was made*. When presented with the Ruegg reference, there would be a determination of what would be obvious variations of this invention and what does this reference teach as a whole.

When reading this reference without the benefit of the applicants' claims, it is clear that Ruegg is directed toward the use of glyphosate/glufosinate in combination with sulfonylureas (compound (I)) to produce synergistic effects. Other herbicides may be added to the combination, *so long as the combination of glyphosate/glufosinate in combination with sulfonylurea produce synergistic effects*. Nowhere in the disclosure of Ruegg is it suggested that combining glyphosate/glufosinate with other herbicides such as (B1) metolachlor, (B2) bispyribac or its salts, and pyrithiobac or its salts; or (B3) sethoxydim and clethodim would produce synergistic effects in combatting harmful plants in cotton crops.<sup>1</sup>

With regard to the Examiner's conclusion that combining substances of the same utility with the expectation of at least an additive effect is incorrect. The additive effect is only a theoretical maximum which presumes that there is no competition between the substances to produce the effect or that no detrimental changes occur which might decrease the additive effect.<sup>2</sup>

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<sup>1</sup> As a test of the Examiner's assertion of obviousness, the applicants suggest showing the Ruegg reference to a colleague who has never seen the applicants' claims before and ask them what they would consider to be obvious variants of the Ruegg reference after reading it without benefit of the applicants' claims. While they may suggest that additional herbicides could be added to the glyphosate/glufosinate with sulfonylurea combination, it is highly unlikely that they would glean that glyphosate/glufosinate + (B1) metolachlor, (B2) bispyribac or its salts, and pyrithiobac or its salts; or (B3) sethoxydim and clethodim would produce synergistic effects especially in the absence of any evidence supporting synergy based on this combination.

<sup>2</sup> As an illustration of this concept, think of an enzymatic reaction where Enzyme A and Enzyme B, which recognize the same active site, both have an activity of 50% on a substrate when used alone. Adding Enzyme A and Enzyme B to the substrate would still result in 50% activity (not 100%) because they would be competing for the same active site.

Synergism requires a showing of more than an additive effect. Not only have the applicants shown this, the applicants have shown synergism even when assuming a perfect additive effect. Moreover, the Examiner is mistaken in asserting that small differences between theoretical maximum additive effects and the effects actually shown are not evidence of synergism. This is synergism on its face. In addition, at high levels of activity, even small increases beyond the theoretical maximum are surprising evidence of synergism.

For example, the effect of 450 g/ha glufosinate-ammonium (A1.2) and 930 g/ha metolachlor (B1.9) as shown in Table 2 (see page 32 of the specification) produced an effect which was 6% greater than the theoretical maximum additive effect (i.e. 94% vs. 88%).

Other measures of synergism such as the Colby equation (see page 28 of the specification) show lesser expectations of additive effects. For example, when assuming that glufosinate-ammonium (A1.2) had some herbicidal effect (e.g. 5%), this and 930 g/ha metolachlor (B1.9) still had 88% activity, the additive effect is not 93% (5% + 88%) but only 88.6%. ( $E = 5\% + 88\% - (5 \times 88/100)\% = 88.6\%$ )

Lastly, while the applicants have provided evidence in support of synergism, there has been no countervailing evidence presented in any office action; only an unsupported opinion with regard to the applicants' evidence.

Therefore, Ruegg does not teach the inventive concept of the applicants claimed invention and the applicants have shown evidence of synergy and as such the applicants' claims are unobvious over Ruegg.

**CONCLUSION**

In view of the remarks and amendments herewith, the application is believed to be in condition for allowance. Favorable reconsideration of the application and prompt issuance of a Notice of Allowance are earnestly solicited. The undersigned looks forward to hearing favorably from the Examiner at an early date, and, the Examiner is invited to telephonically contact the undersigned to advance prosecution.

Respectfully submitted,  
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